

**Species of *Coenonycha* Horn from Mainland
Baja California, Mexico (Coleoptera: Scarabaeidae)¹**

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The genus *Coenonycha* Horn was revised by Cazier and McClay (1943), with one species being subsequently described (Potts, 1945). Of the 29 described species, only *Coenonycha socialis* Horn, endemic to Guadalupe Island, Mexico, has been reported from south of the United States.² The present paper deals with two species that have been recently collected on mainland Baja California, Mexico. Both species have fully developed metathoracic wings and are seemingly rather closely related.

***Coenonycha rotundata* (LeConte)**

MALES—Length 7.2 to 8.0 mm., greatest width 3.4 to 3.7 mm. Dorsal color dark reddish brown. Clypeus shallowly reflexed, less so laterally; anterior margin straight or very slightly emarginate; angles abruptly obtuse, not elevated; lateral margins evenly arcuate, only slightly elevated basally. Disc of clypeus rugose-punctate, more so medially. Clypeal suture distinct, shallowly indented, sinuate. Frons heavily, coarsely punctate, the punctures irregularly confluent near clypeal suture, distinct posteriorly. Vertex heavily, coarsely punctate except for small impunctate area medially near pronotal margin. Pronotum widest at middle, lateral margins evenly arcuate from middle to base, anteriorly shallowly sinuate near anterior angles; each anterior angle acute, somewhat produced, with a group of ocular setae extending forward approximately half the length of the eye. Pronotal marginal line (bead) complete, the line behind the anterior margin nearly straight, distinctly impressed. Pronotal disc moderately convex and coarsely punctate, the punctures separated by one to two diameters, most punctures each with a pale seta. Elytra with sides almost parallel, humeral umbones well developed; each elytron with two to four costae faintly indicated, sometimes obsolete; surface heavily punctate-setose, the punctures usually separated by less than one diameter. Number of elytral punctures between first and second costae (in a roughly transverse line) average between five and six. Metathoracic wings fully developed, apices rounded. Pygidium finely punctate-setose, the setae long and semi-erect; pygidial surface alutaceous. Antenna ten segmented, club approximately as long as adjacent six segments. Ventral surfaces as described by Cazier and McClay (1943, p. 17). Genitalia as in Fig. 1.

FEMALES.—Length 8.0 to 9.2 mm., greatest width 3.5 to 4.1 mm. Similar to males except in the following respects: clypeal disc and frons with punctures more discrete, lacking rugose appearance; clypeus on the average slightly wider; eyes smaller; setae on elytra approximately half as long as those of males, inconspicuous; antennal club shorter than adjacent six segments.

SPECIMENS EXAMINED—9 males, 6 females. 1 female, type (MCZ), southern California; 1 female, Arroyo Santo Domingo, 5.7 miles N. of Hamilton Ranch, Baja California, Mexico, 22 April 1963, P. H. Arnaud and H.B. Leech; 1 male, Coronado, California, H.C. Fall; 2 females, Hamilton Ranch, Baja California, Mexico, 21 April 1963, P.H. Arnaud and H.B. Leech; 1 female, 12 miles S.E. Maneandero, Baja California, Norte, Mexico, 19 April 1965, D.Q. Cavagnaro,

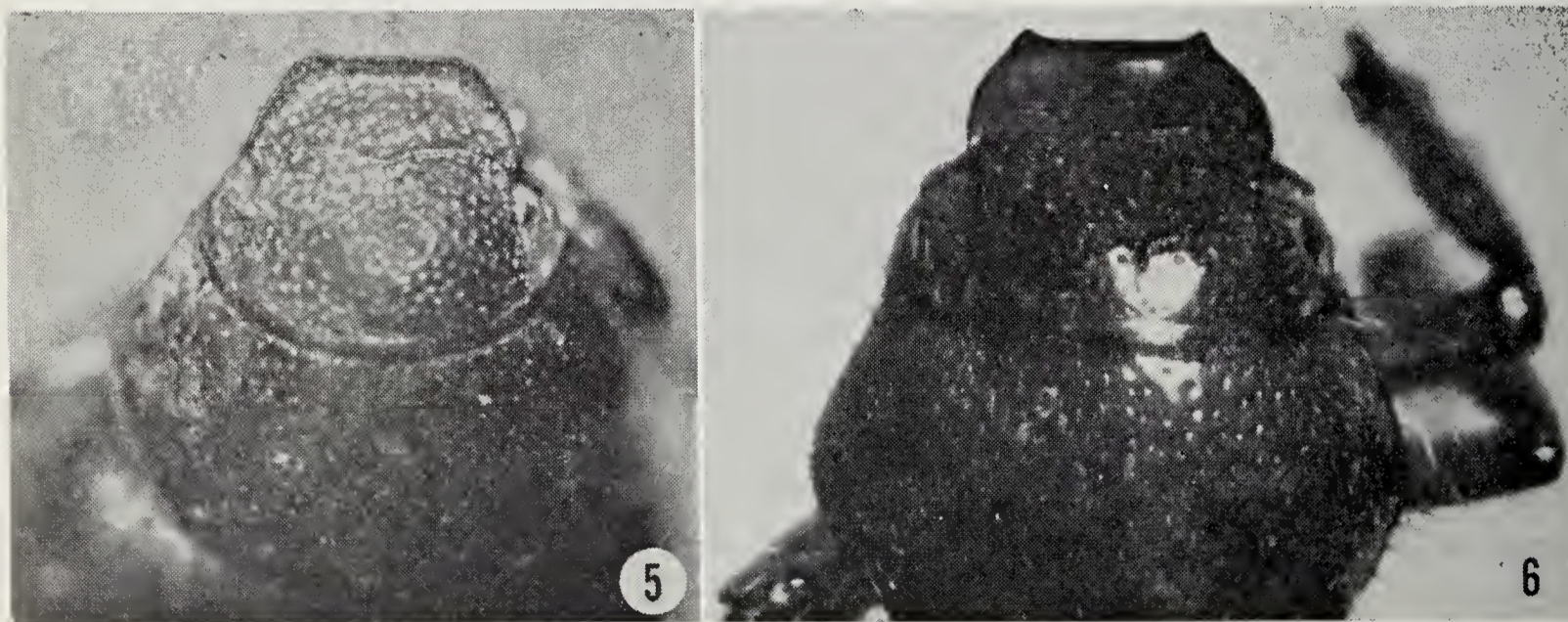
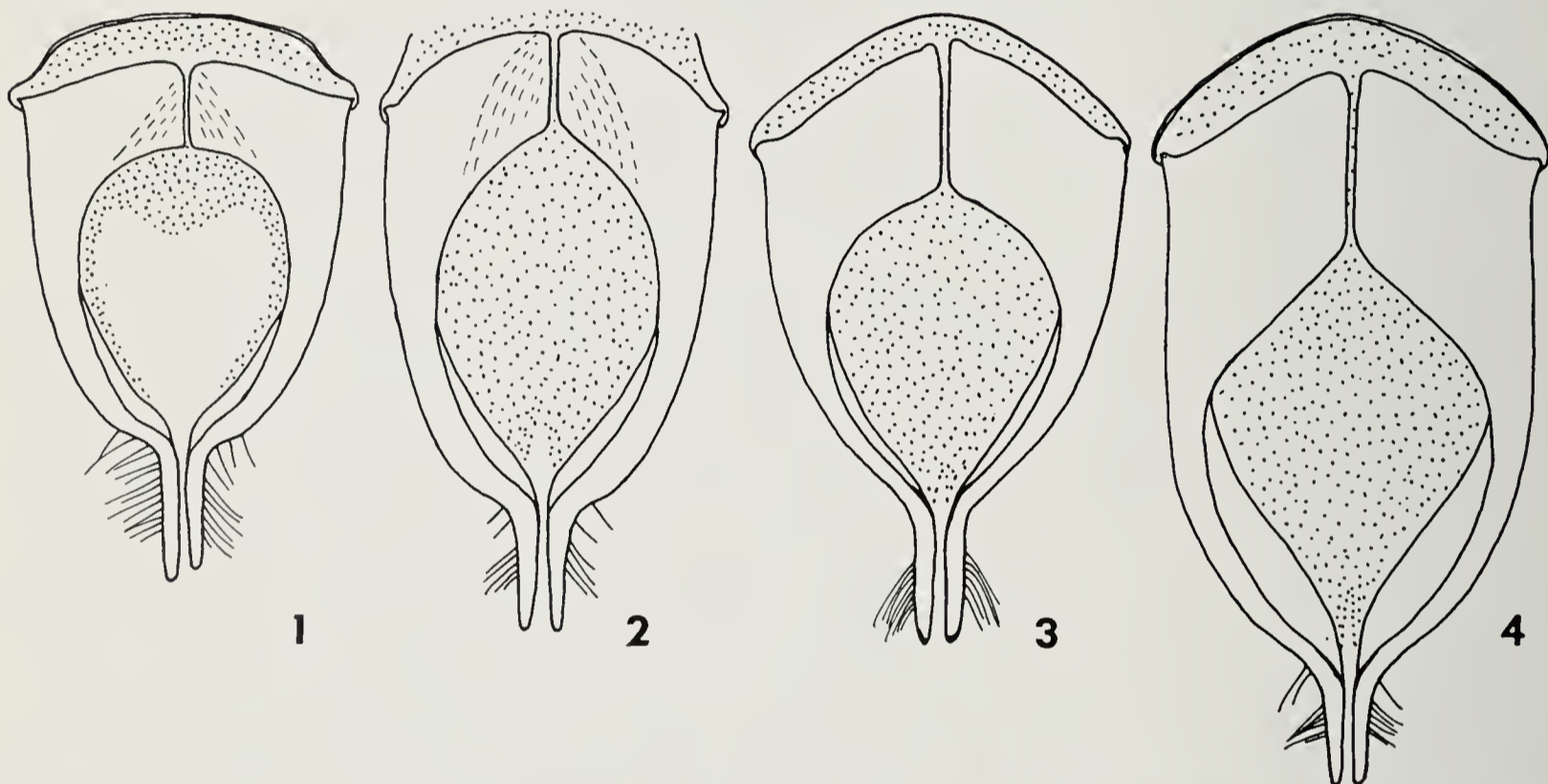
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²Subsequent to the submission of this manuscript two specimens of *Coenonycha testacea* Cazier have been examined bearing the following data: 13 miles S. W. La Zapopita, Baja California Norte, 14 June 1963, E. L. Sleeper.

C.E. and E.S. Ross, and V.L. Vesterby; 8 males, 1 female, 3 miles N.W. Villa Juarez, Baja California, Mexico, 28 April 1963, P.H. Arnaud and H. B. Leech.

VARIATION—In the small series examined it is slight. In two specimens the clypeal angles are rounded, not abrupt. The degree of sinuation of the lateral pronotal margins near the anterior angles varies, but is usually obvious. There is a difference in dorsal vestiture, but this is probably due to abrasion. In other respects, including size and color, the species seems fairly uniform.

The species has been redescribed here, since Cazier and McClay (1943) seemingly based their description on a single pair. I have re-examined the male of this pair (it is in rather poor condition), and included it in the above description. The female type of LeConte is in very poor condition, seemingly being taken from a spider web. Most tarsi are missing, the abdomen is damaged and the head (Fig. 5) is dirty and somewhat worn.



Figures 1-4.—Parameres of male genitalia of *Coenonycha*: 1, *rotundata* (LeConte); 2, *rufobrunnae* n. sp.; 3, *fusca* McClay; 4, *testacea* Cazier.

Figures 5-6.—Dorsal view of heads of *Coenonycha*: 5, *rotundata* (LeConte), female type; 6, *rufobrunnae*, male.

In using the key to the species of *Coenonycha* (Cazier and McClay, 1943, p. 10), considerable difficulty was encountered with *rotundata* (even using the male described in the paper). In couplet 12 some specimens would fall in either dichotomy. The clypeal angles of *rotundata* are not elevated above the rest of the margin; therefore, the margin on either side is essentially of equal height. In most specimens the anterior margin is slightly more reflexed than the lateral margins. The latter character would key to couplet 16 (the correct one), but here too there are difficulties. In the description of the species Cazier and McClay (1943, p. 17) give the color as "dark reddish brown throughout." In couplet 16, *rotundata* has to be keyed through the first part of the couplet which reads "dorsal surface entirely or in greater part testaceous (generally pale testaceous)—17." The other part of the couplet includes "reddish brown" species but this takes one beyond *rotundata* in the key.

The species *rotundata* may be distinguished from other *Coenonycha* by the following combination of characters: metathoracic wings fully developed, color dark reddish brown, size 7.2 to 9.2 mm. (males and females), angles of clypeus not elevated above margin, margin rather evenly reflexed, lateral pronotal margins near anterior angles usually sinuate, pronotal punctures large and separated by one or more diameters, elytra distinctly setose.

Cazier and McClay related *rotundata* to *clypeata* McClay, *fulva* McClay and *testacea* Cazier. Of these, *clypeata* seems most closely related; it can be separated from *rotundata* by its more setose head and pronotum, generally larger size, and by its range. The dark color will separate *rotundata* from either *fulva* or *testacea*. Also I consider *fusca* McClay quite closely related to *rotundata* but it, as well as *testacea*, show genitalic differences (Figs. 3. 4.). Seemingly the closest relative to *rotundata* is described below.

***Coenonycha rufobrunnae* Howden, NEW SPECIES**

HOLOTYPE.—Male, length 8.8 mm., greatest width 3.7 mm. Dorsal color reddish brown. Clypeus shallowly reflexed anteriorly and laterally except for elevated, abrupt angles; anterior margin shallowly emarginate between angles; lateral margins gradually arcuate, more distinctly elevated basally than in *rotundata*. Disc of clypeus coarsely punctate, the punctures contiguous medially and somewhat irregular, surface not distinctly rugose. Clypeal suture distinct, moderately indented, sinuate. Frons coarsely, contiguously punctate, some punctures confluent anteriorly. Vertex with anterior third coarsely punctate, a median transverse area impunctate, and posterior third with numerous, moderately fine punctures. Pronotum widest at middle, lateral margins evenly arcuate from middle to base, anteriorly very shallowly sinuate near anterior angles; each anterior angle acute, slightly produced, with a group of ocular setae extending forward approximately one-third the length of the eye. Pronotal marginal line (bead) complete, the impressed line behind the anterior margin slightly arcuate anteriorly near median line. Pronotal disc moderately convex and coarsely punctate, the punctures separated by less than one-half diameter in posterior half of pronotum, by approximately one diameter in anterior half; some lateral and posterior punctures each with a pale seta. Elytra with sides almost parallel, humeral umbones well developed; each elytron with four costae (excluding sutural one) indicated; surface heavily punctate-setose, the setae shorter than in *rotundata* and inconspicuous. Number of elytral punctures between first and second costae (in a roughly transverse line) average between four and five. Metathoracic wings fully developed, apices rounded. Pygidium finely punctate-setose, the setae moderately

long and semi-erect; pygidial surface alutaceous. Antenna ten segmented, club slightly shorter than adjacent six segments. Ventral surface as in *rotundata*. Genitalia as in Fig. 2.

ALLOTYPE.—Female, length 9.1 mm., greatest width 4.0 mm. Similar to holotype except in the following respects: clypeal angles less produced, clypeus slightly wider; eyes smaller; setae on elytra slightly shorter and less conspicuous; antennae club approximately as long as adjacent five segments.

Type material—Holotype, male, 7 miles N.N.W. (Rancho) Rosarito, Baja California, Mexico, 8-9 April 1961, Allyn G. Smith (CAS). Allotype, female, same data as holotype (CAS).

Paratypes—22 males, 24 females. 1 male, 8 females, same data as holotype; 2 males, 31 miles N. El Arco, Baja California, Mexico, 10 December 1958, H.B. Leech, at light; 1 male, El Arenoso, Baja California, Mexico, 20 January 1960, D. Porter; 1 male, 3 females, 2 miles N.E. El Rosario, Baja California, Mexico, 7 December 1958, H.B. Leech, at light; 1 male, 22 miles N. Punta Prieta, Baja California, Mexico, 9 December 1958, H.B. Leech, at light; 1 male, 4 miles W. San Vicente, Baja California, Mexico, 2 November 1958, R. K. Selander; 5 females, 9 miles E. Rosario, Baja California Norte, 29 March 1961, E. L. Sleeper; 15 males, 8 females, 7.5 miles S. Santo Thomas, Baja California, 29 January 1968, E. L. Sleeper.

Paratypes are deposited in the following collections: CAS, CNC (No. 10456), Howden, Sleeper.

Variation—It is most evident in specimens from different localities. Size ranges from 7.8 to 9.3 mm. in length and from 3.3 to 4.2 mm. in greatest width, with females usually slightly larger than males. Females usually have the somewhat dentiform clypeal angles less pronounced and appear more robust than males. The central emargination of the clypeus is more pronounced and the color more nearly brown in the specimens from El Arenoso and San Vicente. Length of dorsal setae and the density of the pronotal punctures also show moderate variation.

Coenonycha rufobrunnea is most closely related to *rotundata*; it can be separated from *rotundata* by its elevated (almost dentiform) anterior clypeal angles; by its lighter, reddish brown color; and by its less conspicuous dorsal setae. Two other species, *rubida* McClay and *fusca* McClay are rather closely related; *rubida* may be distinguished from *rufobrunnea* by its densely punctate pronotum and *fusca* has clypeal and genitalic (Fig. 3) differences.

In Cazier and McClay (1943) *rufobrunnea* will usually key to *purshiae* Cazier. It can be separated from this species by its larger, more widely separated pronotal punctures and less bidentate clypeus.

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LITERATURE CITED

- CAZIER, M. A. and A. T. McCLAY. 1943. A revision of the genus *Coenonycha* (Coleoptera, Scarabaeidae). American Mus. Novitates 1239: 1-27.
- POTTS, W. L. 1945. A new *Coenonycha* from California (Coleoptera, Scarabaeidae). Pan-Pacific Ent. 21: 141-143.